Assignment 2 : Q1: Report

Question 1 *Diffusion Tensor Magnetic Resonance Imaging*

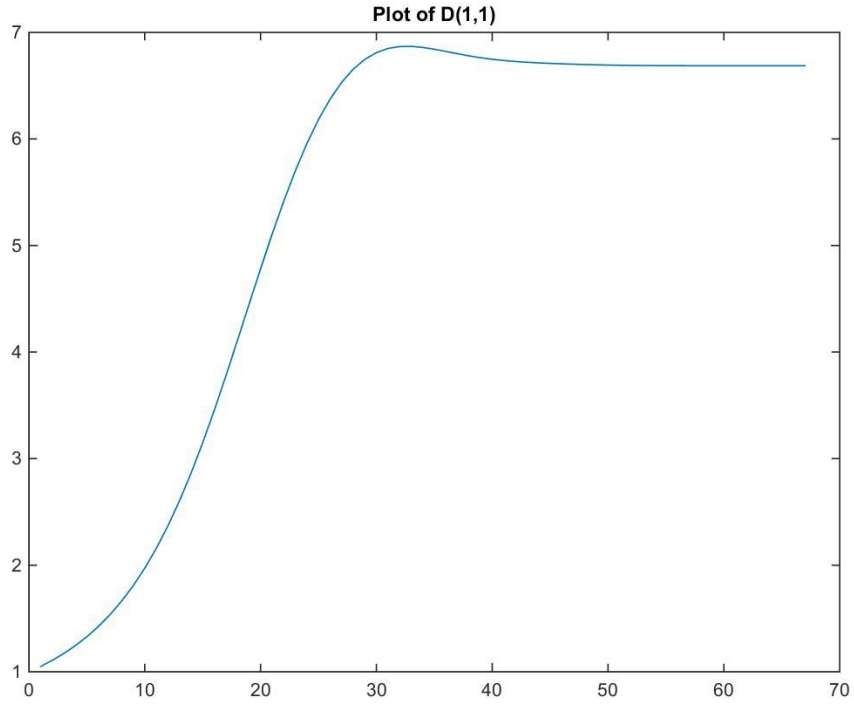
Part a

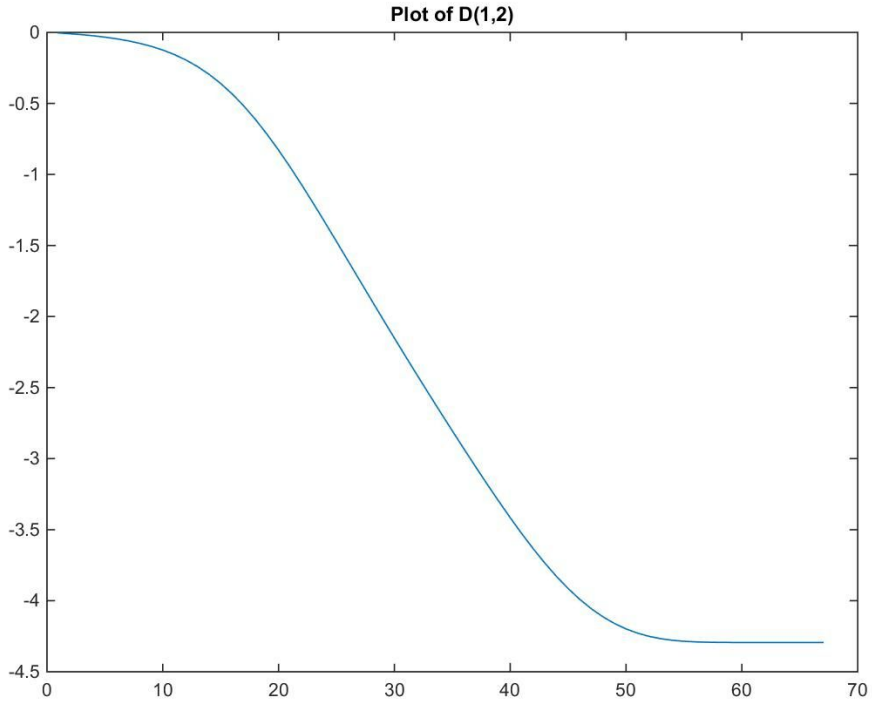
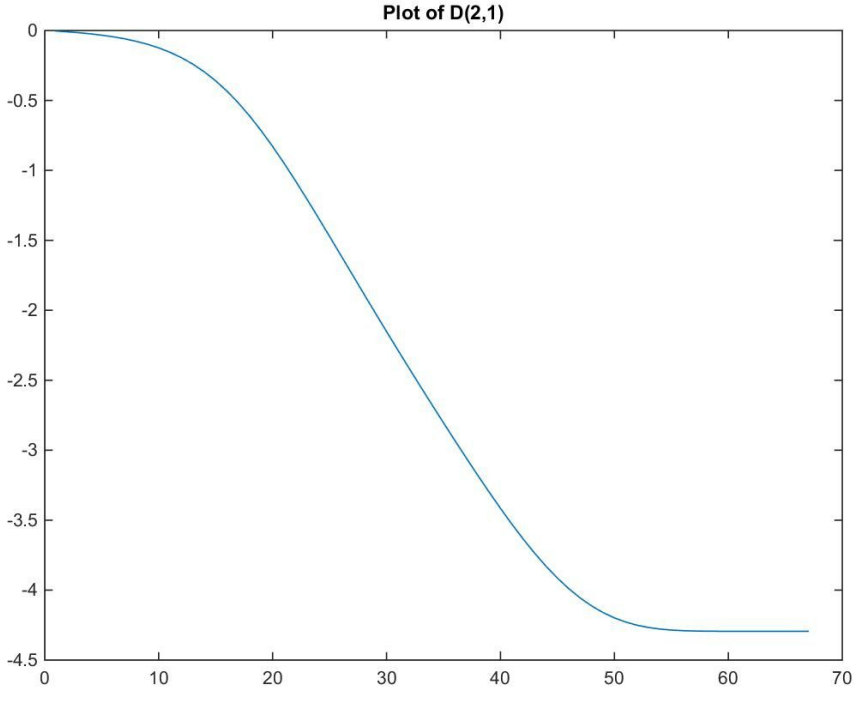
D matrix has been estimated using projected gradient descent. Code of the same can be found in 'code' folder of corresponding question.

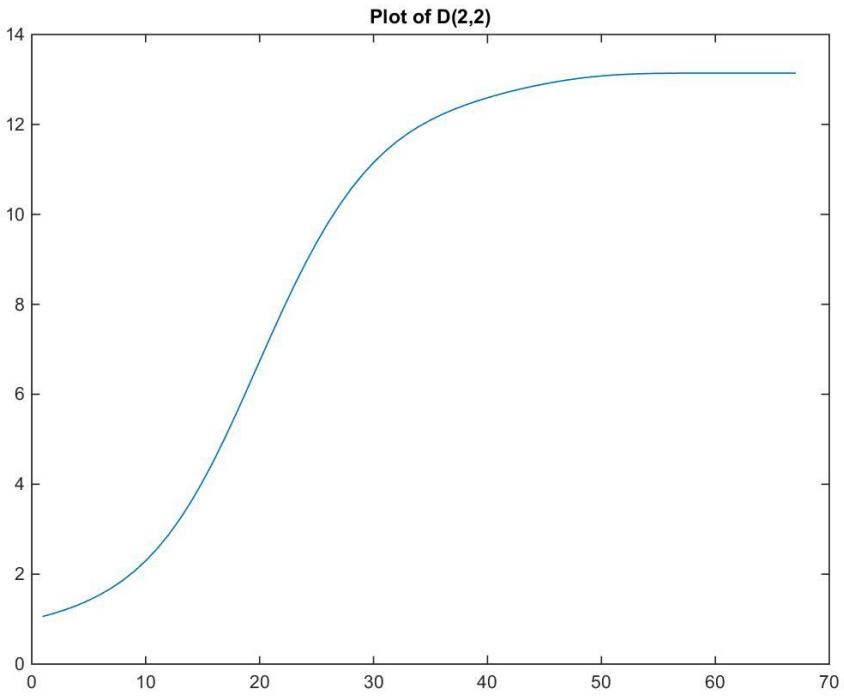
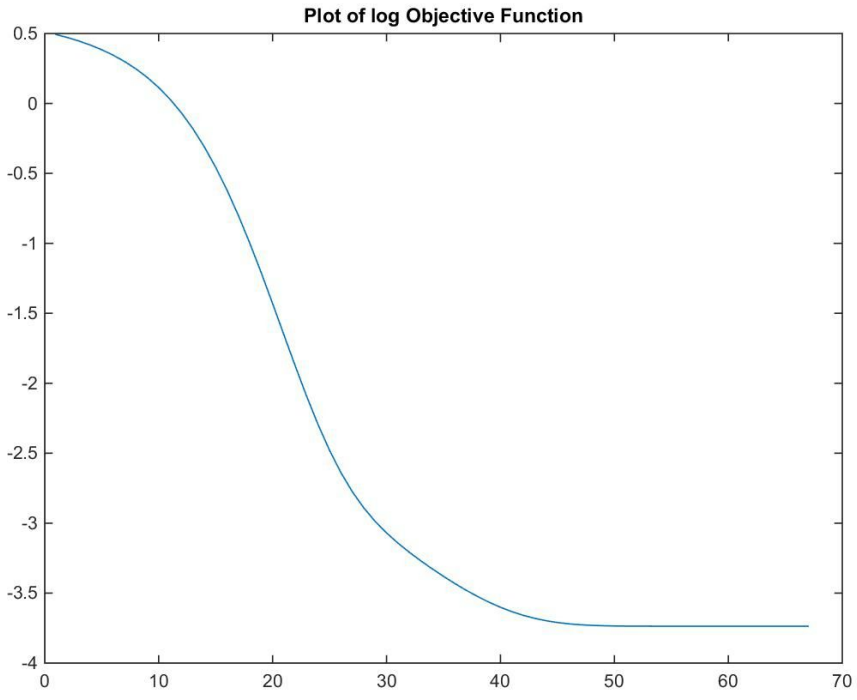
Entries of D are: [6.6871 -4.2941]
[-4.2941 13.1410]

Plots of the sequences are as follows:

In all the below shown plots x-axis represent iteration number and y-axis represent value.

Description	Plot
D11	

D12	 Plot of D(1,2) 0 -0.5 -1 -1.5 -2 -2.5 -3 -3.5 -4 -4.5 0 10 20 30 40 50 60 70
D21	 Plot of D(2,1) 0 -0.5 -1 -1.5 -2 -2.5 -3 -3.5 -4 -4.5 0 10 20 30 40 50 60 70

D22	
Objective Function	

Part b

Principal Direction of Diffusion: [-0.4468,0.8946]

Part c

Multiplicative factor by which diffusion in principal direction is larger than non principal direction. : 3.3649